

Solid Waste Management Scenario in North Maharashtra Region

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Abstract—This paper reviews the current status, institutional framework, infrastructure, challenges, and opportunities for municipal solid waste management (MSWM) in the North Maharashtra region (districts covered: Nashik, Jalgaon, Dhule, and Nandurbar). It synthesizes government plans, municipal reports, published studies and recent projects to estimate waste generation, processing capacity, segregation and recovery practices, and key bottlenecks. The study highlights progress (source segregation, composting, material recovery facilities), infrastructure gaps (processing shortfall, landfill management), and provides prioritized recommendations for decentralized treatment, formalization of informal recyclers, public-private partnerships, and monitoring to meet the Solid Waste Management Rules (2016) and state targets.

Index Terms—Municipal solid waste, North Maharashtra, Nashik, Jalgaon, Dhule, segregation, composting, MRF, MSW Rules.

I. INTRODUCTION

Maharashtra is one of the urbanized states in the country. The state is having total 258Nos. of Local Bodies. The population of Maharashtra as per 2011 census is about 11.24 crores, out of which 45.22% people live in urban areas. The total figure of population living in urban areas is 5.1 crore and the urban population in the last 10 years has increased by 45.22%.

Municipal solid waste management (MSWM) remains a pressing urban-environmental challenge for fast-

growing Indian cities. North Maharashtra — broadly comprising Nashik, Jalgaon, Dhule and Nandurbar districts faces rising waste generation driven by urbanization, changing consumption patterns and agricultural/industrial activity. Effective MSWM is critical for public health, resource recovery, and environmental compliance with the Solid Waste Management Rules (2016).

II. STUDY AREA AND DATA SOURCES

For this paper, 'North Maharashtra' denotes the primary northern districts of Maharashtra: Nashik, Jalgaon, Dhule, and Nandurbar. Secondary data were compiled from district environment plans, municipal solid waste management plans, municipal corporation environment status reports, recent tenders and state publications.

III. CURRENT STATUS GENERATION, COLLECTION AND PROCESSING

District-level surveys show varying per capita waste generation across cities. Jalgaon reports ~486 MT/day (dry 252 MT/day; wet 224 MT/day). Nashik has seen rapid growth and expanded processing capacity. Door-to-door collection is operational in most ULBs, but segregation compliance is inconsistent. Processing facilities include composting plants and MRFs, with plans for further expansion.

Table No. 1 Region wise Solid Waste Generation by ULBs

Regions	Corporations	Municipal Council “A”Class	Municipal Council “B” Class	Municipal Council “C”Class	Nagar Panchayats
Aurangabad	990	256	157.1	247.44	93.52
Nashik	1292.11	88	272	185.07	79.71
Nagpur	1000	122	125.7	92.24	47.5
Pune	3300	115	174.7	173.58	48.2
Chandrapur	105	60	145.58	82.07	54.11
Amravati	512	33	239.84	91.73	33.5
Kolhapur	420	130	88	107.83	46.066
Raigad	450	-	28	56	28.82
Thane	2120	-	37	5	10.02
Kalyan	1450	224	-	-	9.32
NaviMumbai	750	-	-	11	-
Mumbai	6661	-	-	-	-
Total	19050.11		1267.92	1051.96	450.766

Table No. 2 Region wise Solid Waste Treated/Processed by ULBs

Regions	Corporations	Municipal Council “A”Class	Municipal Council “B” Class	Municipal Council “C”Class	Nagar Panchayats
Aurangabad	718	153	122.595	140.04	52.22
Nashik	970.4725	52	203.95	119.81	51.66
Nagpur	200	70	91.7	62.46	31.6
Pune	2888	107.5	157.18	142.11	41.1
Chandrapur	90	39	94.3	56.92	23.89
Amravati	97	28	124.5	56	14.1
Kolhapur	273	75	85	85.61	33.31
Raigad	350	-	28	54.62	11.2
Thane	1539	-	18	3	3.82
Kalyan	243	64	-	-	2
NaviMumbai	620	-	-	6.5	-
Mumbai	5500	-	-	-	-
Total	13488.4725	588.5	925.225	727.07	264.9

IV. INSTITUTIONAL FRAMEWORK AND POLICY CONTEXT

MSWM in India is governed by the Solid Waste Management Rules, 2016. State and municipal bodies implement these rules through local plans, budgets, and contracts. The Maharashtra Pollution Control Board oversees compliance and reporting.

V. KEY CHALLENGES

- Processing shortfall vs generation.
- Incomplete source segregation.
- Unsanitary dumping sites.
- Informal recycling sector integration.
- Limited institutional and financial capacity.

VI. NOTABLE INITIATIVES AND POSITIVE DEVELOPMENTS

Nashik emphasizes 3R strategies and decentralized composting. The 3R indicates Reduce, Reuse and Recycle.

Reduce-

- The most uncontrollable phase in Solid waste management is ‘Waste generation’. Generated solid waste particularly from non-point sources is always a challenge for local administration, so best practice is to reduce the generation of Solid waste.
- The reduction of waste can happen only when everybody reduces waste generation in the first place.

- Every individual has to contribute in doing so. There is urgent need of public awareness about waste generation. There should be awareness at all levels of Society, which will motivate them to change their casual habits which creates waste.
- Public-Private Partnership should be engaged in this awareness activity.
- Definite Point Sources of waste generation like Hotels, Restaurant, and Shopping Complexes etc should contribute their space for disposal in their area itself, which ultimately reduces the burden of Collection.

Reuse-

- Utilization value of any item should be known to people who are using it.
- NGOs working for under privilege society should work for establishing centers which provides goods for secondary use. Such centers can be set up at the source.
- Private sector involvement should be encouraged, repairing facilities should be offered so goods can be used as per its utilization value.
- Large production companies of electronic appliances, gadgets etc should establish the collection centers, where damaged items can be repaired & reused.
- NGOs, Self help group etc can organize workshop, seminars which encourage people to use waste material to create some decorative articles.

Recycle-

- The process of transforming materials into secondary resources for manufacturing new products is known as Recycling.
- Waste recycling leads to less utilization of raw materials, saves on landfill space, reduces the amount of energy required to manufacture new products. In fact recycling can prevent the creation of waste at the source.
- Promoting/motivating citizens to start segregation of waste at source involving NGO's, co-operatives, private, Commercial & industrial sectors for appropriate mass awareness campaigns
- Source separation: by keeping recyclables and organics waste separate at source, i.e., at the point

of generation facilitate reuse, recycling, and composting.

Initiative taken/proposed by the MPC Board:

- Board has developed web portal for urban local bodies to monitor daily and monthly data for waste generation, segregation, collection, transportation from administrative ward and its proper treatment. All corporations are submitting the details of waste collected, transported and treated in concern wards. Hence it is resulted in self- certification and self-audited by local bodies.
- Board constantly issuing notices/DO letters/directions to the Municipal Corporations/Councils for implementation of SWM Rules, 2016.
- Hon'ble Chairman has issued Directions under section 5 of the Environment (Protection) Act, 1986 to all local bodies for implementation of Solid Waste Management Rule, 2016.

Private operators run MRFs and large composting plants. District-level plans in Jalgaon and Dhule provide baselines and DPRs for upcoming infrastructure.

VII. RECOMMENDATIONS

- Promote decentralized composting.
- Expand MRF and segregation systems.
- Strengthen enforcement and incentives.
- Upgrade legacy dumpsites to sanitary landfills.
- Create a unified data monitoring system.
- Develop PPP and cooperative models.
- Build technical and financial capacity.

VIII. CONCLUSIONS

North Maharashtra shows encouraging planning efforts but still faces persistent gaps in segregation, processing, and landfill management. Scaling decentralized treatment, expanding MRF capacity, and integrating informal workers can move the region toward sustainable compliance with MSW Rules (2016).

REFERENCES

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